SMART-UP

CONSUMER EMPOWERMENT IN A SMART METER WORLD

# SMART-UP: CONSUMER EMPOWERMENT IN A SMART METER WORLD

# Impact Report

PIM PROJECTS IN MOTION

AISFOR

NEA Action for Warm Homes

ecoserveis

Alphéeis L'énergie de vos projets

# CONTENTS



# INTRODUCTION

Smart meters are the next generation of energy meters, able to provide information on energy usage directly to suppliers, leading to an end to estimated billing as well as providing the opportunity for consumers to have greater understanding of their energy use and change their energy-related behaviours. The EU aims to replace at least 80% of electricity meters with smart meters by 2020 wherever it is cost-effective to do so, which along with the rollout of smart grids could reduce emissions in the EU by up to 9% and annual household energy consumption by similar amounts[1]. On average, smart meters provide savings of €160 for gas and €309 for electricity per metering point (distributed amongst consumers, suppliers, distribution system operators, etc.) as well as an average energy saving of 3%[2].

At the same time there is growing recognition at EU and Member State level of the issue of **energy poverty**, that is, the inability to access adequate energy to heat, cool and power the home. Energy poverty is a distinct form of poverty that is most likely to affect low-income and vulnerable households, and is caused by high energy expenditure, low household incomes and inefficient buildings and appliances. It is estimated to affect around 50 million households in the European Union[3] and the impacts on individuals and communities can be devastating: poor physical and mental health, low educational attainment, social isolation, and reduced economic activity. Addressing energy poverty can bring multiple benefits including reduced demand on public health services, reduced air pollution, improved comfort and wellbeing, and increased economic activity.

However, while smart metering has the potential to reduce energy poverty by improving energy efficiency and reducing household energy bills, previous studies have shown that smart meters in themselves do not automatically lead to energy savings in the residential sector[4]; that the absence of an In Home Display (to provide consumer feedback on energy use) can impair performance[5]; and that only end-users who clearly opt for their use and who are motivated can achieve energy savings. These challenges are even more acute when working to engage and support vulnerable consumers[6].

The SMART-UP project was designed to address some of these challenges, both by directly assisting vulnerable smart meter consumers and by conducting research to contribute to the wider body of knowledge on how to engage with these householders effectively and instigate energy-related behaviour change. It has also attempted to understand whether solutions to energy poverty can be found in the provision of energy services and support via public action centres and social workers engaged with this cohort.

Over the course of three years, organisations in France, Italy, Malta, Spain and the UK have worked to train stakeholders on how to identify and assist vulnerable smart meter householders; supported them to deliver advice to these householders; and conducted research to monitor the impact of this advice. This report summarises some of the activities and impacts of SMART-UP, with more detailed research reports, training materials and other information available at **www.smartup-project.eu**

1. https://ec.europa.eu/energy/en/topics/markets-and-consumers/smart-grids-and-meters
2. Ibid
3. https://www.energypoverty.eu/about/what-energy-poverty
4. Eg Fisher, 2008: 'Feedback on household electricity consumption: a tool for energy saving?'; Wallenborn, 2011, 'Household appropriation of electricity monitors'
5. Fischer, 2008; Empower Demand I, VaasaETT, 2011
6. Eg Darby, 2011, 'Metering: EU policy and implications for fuel poor households'

# OVERVIEW

## What we did

**Activate:** Each member of the SMART-UP consortium engaged stakeholders who already had established relationships with vulnerable energy consumers and were willing to assist with recruiting these consumers to the project.

**Train:** Engaged stakeholders received training to enable them to identify and assist vulnerable energy consumers with smart meters.

**Advise:** Frontline workers recruited vulnerable consumers to the project, gained their informed consent, provided face-to-face energy advice, and completed a questionnaire to capture baseline data on energy use.

**Monitor:** The SMART-UP consortium collected baseline data and issued a follow-up questionnaire 6-12 months following the initial advice visit to assess the impact of the advice. Some households also received additional support, intervention and monitoring as part of a more in-depth small scale pilot. Qualitative, semi-structured interviews were held with stakeholders and some householders.

**Analyse:** Quantitative and qualitative data was collected and analysed, to understand impacts, insights and lessons learned.

*"After the visit, the smart meter made sense. At least I could know how many days are left in my readings, what I'm paying, is it worth what I'm using and all that. Day by day you can read it every day. You can know how much spend even if you are away on holiday. With the conventional meter all this information wouldn't come up. You wouldn't know. You would just not know, but with the smart meter you can see the date, how much you spent every day, it's fantastic."*

**(SMART-UP participant)**

## SMART-UP locations

**UK, France, Malta, Italy and Spain**

# Our successes include

**23 stakeholder organisations activated**

**530 stakeholders trained** to support vulnerable energy consumers with with smart meters

**4,463 vulnerable households** provided with energy advice, benefiting an estimated 13,000 consumers in total

**322 vulnerable households** provided with additional enhanced advice through the small-scale pilot

**80% of participants** took action to reduce the amount of energy that they use, and **65%** were using their In Home Display or similar app more often

**Local and national policies** to tackle energy poverty and improve energy efficiency informed by the project

# ABOUT THE PROJECT

SMART-UP was a three-year project which ran from 2015-2018 and was funded by the European Union's *Horizon 2020 Research and Innovation Fund*. The project was operational in France, Italy, Malta, Spain and the United Kingdom with the following aims;

- To increase the active and effective use of smart meters and in-home displays (where fitted) by vulnerable consumers.
- To encourage vulnerable consumers to change their energy-related behaviours in response to improved feedback information.
- To enable vulnerable consumers to make significant energy savings, reduce their fuel bills and seize further opportunities that may be offered by demand-response services.

The core activity of the project involved training frontline workers on how to identify and assist vulnerable smart meter householders; supporting them to deliver advice to these householders; and conducting research to monitor the impact of this advice.

## Engaging with stakeholders

Engaging and activating a network of trusted stakeholders was essential to recruiting vulnerable householders to the project. SMART-UP partners engaged with at least **23** active stakeholder organisations formally throughout the project, and many more were reached indirectly via dissemination activities.

Stakeholders included those already working directly with vulnerable consumers, such as representatives from social work departments and housing associations, who for the most part supported the project by delivering advice and assistance to their client group. In some countries, the project was also successful in engaging the support of national/local government representatives which resulted in the integration of SMART-UP objectives within other schemes and contributed to the project's success. Other stakeholders engaged included energy suppliers and energy distributors/network operators; advocacy and campaigning organisations; researchers; and others with an interest in smart meters, energy efficiency and energy poverty.

## Delivering training

Another key part of the project was ensuring that engaged frontline workers were equipped with the knowledge needed to provide face-to-face advice to vulnerable smart meter users. Training packages were developed and delivered by the SMART-UP consortium and were tailored to the needs of each stakeholder group. Broadly, the training covered how to identify energy vulnerability; the importance of providing support to vulnerable consumers; advice on how to read smart meters and understand energy bills; and details of any current policies/benefits/procedures which could support those consumers. The training also focused on how to advise consumers to change their energy usage at home; and ensured that they understood the principles of informed consent and how to collect data for the project. In total, the project delivered **35** training sessions to **530** stakeholders.

### Ethics

It was important that the project conformed to the highest ethical standards. In particular this involved ensuring that any participants provided 'informed consent' – that they understood what data was to be collected and why.

Our ethical policies and procedures were fully compliant with national laws relating to data collection and ethical research, and certified by a specialised ethics 3rd party.

## Identifying participants and delivering enhanced advice

SMART-UP partners worked with stakeholders to design and support engagement strategies to recruit vulnerable consumers to the project. Stakeholders then provided face-to-face advice to consumers on how to use their smart meters, understand their energy bills and become more energy efficient. In the UK all homes had energy displays (known as "In Home Displays"), which are visual displays provided along with the smart meter that are designed to provide feedback on energy use, such as displaying the amount of energy used that day in pounds and pence. In this case much of the advice focused on how to use the IHD to understand energy use, and how to act on this information to reduce energy use in the home. In other countries where IHDs were not present (and the actual smart meters themselves were inaccessible to the householder), the advice focused on increasing general understanding of energy use, but IHDs/apps/feedback devices were introduced for the majority of the small-scale pilots (see below).

Stakeholders also explained the project to the consumer, gained their informed consent to participate, and completed a questionnaire to help capture the baseline data.

**4,463** vulnerable households were provided with energy advice through the project, benefiting an estimated **13,000** consumers in total.

## Undertaking research – large and small-scale pilots

It was also important that the SMART-UP consortium could understand the impact that providing enhanced advice had on the energy use and behaviour of the householder. 6-12 months after the initial intervention, all householders were contacted and asked to complete a follow-up questionnaire to help capture some of these impacts. A selection of stakeholders were also interviewed to gain further qualitative insight into some of the project impacts and to understand their experiences of project delivery.

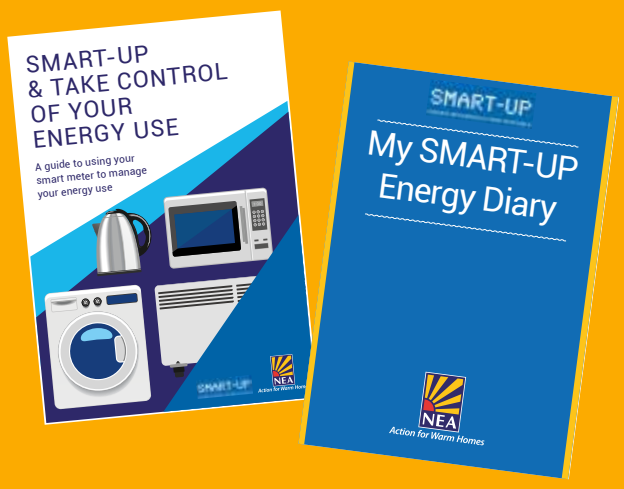
In addition to delivering initial advice and completing questionnaires to 4,463 households, 322 of these households were also involved in a **small-scale pilot** to understand how variations in the advice and support provided may impact on engagement with the smart meter and energy-related behaviour change. The implementation of the pilot was largely similar in each country, and involved forming experiential groups of around 15-20 households to test different combinations of the following;

- Use of energy monitoring tool (SMART-UP energy diary).
- Follow-up call after two weeks.
- Aftercare service – three telephone calls at three-month intervals.
- Use of IHDs / monitoring apps in all countries except the UK (where IHDs are offered to all customers as standard), and Malta.
- Control group (received no enhanced energy advice or additional support).

### SMART-UP resources

To support the training and advice, and in order to encourage action by the householder, a range of materials were produced. These included training booklets, guides to using IHDs, participant packs and fridge magnets. A paper 'energy diary' was also developed for use in each country, to provide a means of recording energy usage (and prompt action).

**Copies of all materials distributed are available on the SMART-UP website www.smartup-project.eu**



## The people we helped

The project was specifically targeted at vulnerable householders. While there were some variations as to how this was defined in each country, broadly speaking it involved those who were less able to represent their interests or participate in the energy market; those who because of personal circumstances were unable to safeguard their own welfare or that of others in the household; or those who had access to government funding programmes which required meeting certain social criteria.

As SMART-UP was focused primarily on achieving electricity savings householders also needed to live in a home which had an electricity supply and where they paid the energy bill; and the primary participant needed to be over the age of 18.

## Of those we reached....

**28.6%** of participants were in receipt of means-tested benefits

**28.6%** had a long-standing physical or mental health condition or disability

**23%** of households contained someone who was retired, **24.7%** someone who was working full time, **13%** someone who was working part time, **41.4%** someone who was unemployed and **41.2%** someone who was in full time education

**69.8%** said that someone in the household was usually at home all day

## Participants used electricity for the following purposes

**56.3%**
for primary heating

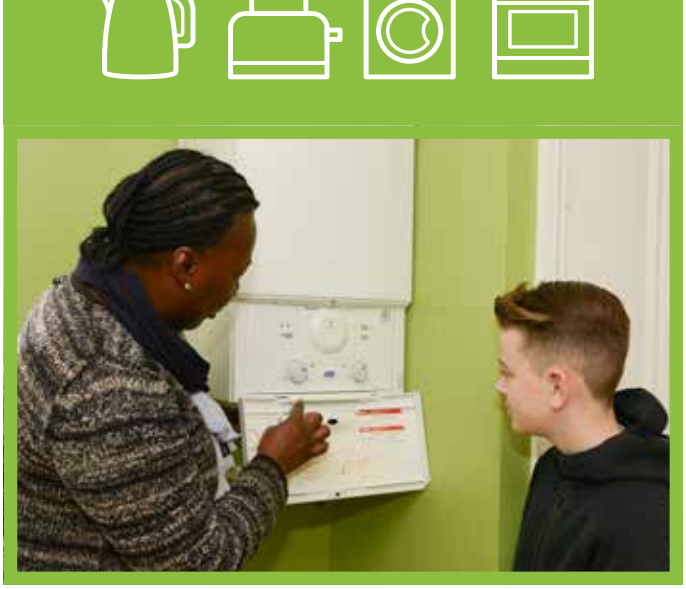
**19.6%**
for secondary heating

**25.4%**
for hot water

**18.1%**
for primary cooling

**30.2%**
for secondary cooling

**44.5%**
for cooking



# SMART-UP IN FRANCE

**SMART-UP in France was delivered by energy consultancy and overall project coordinator Alphéeis.**

The official smart meter rollout began in France on 1 December 2015, following a test phase initiated in 2010, where 250,000 smart meters were installed in two regions. To date, more than 5 million meters have been installed although the pace of deployment has been slower than initially expected due to the need to train the network of installers, and also the concerns of some municipalities and citizens relating to perceived health or data collection/privacy issues. In the vast majority of multi-residence buildings, smart meters have replaced old meters which are situated in communal areas and usually in closed cupboards, which makes it difficult or impossible for inhabitants to access the meters.

To deliver SMART-UP, Alphéeis engaged with and trained employees of the ADAM association, which undertakes specialised work in a variety of fields including social mediation, social inclusion, employment coaching, and communication actions on the urban renovation of the district. The ADAM association then visited and provided advice to 919 households in the 'Les Moulins' district of Nice.

In France, as with the majority of other countries represented by SMART-UP, In Home Displays are not provided as a standard feature of the smart meter installation. Therefore the small scale pilot equipped two groups of 10 households with a device that allowed consumers to access monthly, daily and hourly electricity and water consumption data for their household, as well as compare their consumption to that of similar households and access their consumption in euros. This infrastructure was developed by Véolia through a project named CUSA led by the Metropole Nice Côte d'Azur, but in order to view the information households must have a computer, smartphone or tablet. With 40 - 50% of households not having access to these devices, an attempt was made to trial communicating the information via TV, however technical difficulties meant that subsequently only those households which could access information via computer, smartphone or tablet were included in the pilot.

**919 households provided with enhanced advice**

**60 households involved in small-scale pilot**

**45 people trained**

An additional two groups of 10 households were trained to use the website developed by national network operator ENEDIS to monitor their electricity consumption. This included features such as monitoring of consumption for different periods (year, month, day, hour) and comparison with households of a similar size. Follow-up calls and text messages were also used to engage with some of the experiential groups to encourage people to continue to use the tools made available to them.

Through SMART-UP, Alphéeis also engaged with UNCASS (the National Union of Communal and Inter-Municipal Centre of Action) which promoted the project to its members and resulted in 25 stakeholders also receiving training. Subsequently UNCASS now organises its own sessions for frontline workers dedicated to energy poverty.

*"Delivering SMART-UP in France has had many positive impacts. As well as providing over 900 households with advice, the research revealed key insights such as the importance of working with locally-established and well-known actors to engage with consumers; the need to educate households on energy efficiency and make them aware that simple daily actions can have a significant impact on their energy consumption; and greater understanding of how to instigate energy-related behaviour change. The subsequent decision of UNCASS to provide energy poverty training for frontline workers will also help to multiply the project impacts into the future."*

**Pierre Nolay, Alphéeis**

# SMART-UP IN MALTA

**659 households provided with enhanced advice**

**60 households involved in small-scale pilot**

**86 people trained**

**SMART-UP in Malta was delivered by Projects in Motion, an SME focused on promoting environmental resource management and energy efficiency. PiM also implements renewable energy research projects and conducts research for European and local government bodies, major companies and SMEs. In Malta the smart meter rollout began in 2009 and is now complete.**

SMART-UP in Malta was delivered in partnership with the Ministry for the Family, Children's Rights and Social Solidarity, after it was noted that SMART-UP's aims aligned with those of the Ministry's LEAP project. LEAP is tasked with combating social exclusion and poverty through employment, capacity building, social integration and social mobility. Consequently it was agreed to combine SMART-UP's efforts with those of LEAP, which has established 11 Regional Development Centres and Family Resource Centres across the country in order to reach out to the most deprived via efforts on the ground related to the 'Fund for European Aid to the Most Deprived' (FEAD). Through FEAD, food packages are distributed to those meeting pre-established criteria.

77 LEAP social workers received SMART-UP training. They then, in collaboration with PiM, completed SMART-UP advice visits and collected questionnaire information. Subsequently, questions on energy poverty have been included in structured interview guides that social workers use when assessing eligibility for the LEAP project, enabling them to immediately understand whether there are any cost efficiencies that could be undertaken relatively quickly, and to include energy poverty measures in their client advice where relevant.

At the same time, SMART-UP also collaborated with the Maltese government's Energy and Water Agency (E&WA) which was tasked to 'introduce free and voluntary energy efficiency audits for every residence in Malta and Gozo' and 'to introduce more schemes to help families and businesses increase efficiency and lower energy bills' under successive political manifestos of the governing Party. Furthermore, the 2017 Manifesto also commits to 'launching schemes to help families, especially those considered vulnerable, to replace old and wasteful appliances with a direct incentive from the Government'. Consequently the project also trained nine technical employees at the E&WA who were tasked with undertaking the energy audits on a national level. LEAP and E&WA employees then visited households as part of the national audit process, combining data collection with energy advice.

In addition, 60 households were engaged with the small-scale pilot, receiving a combination of information packs, enhanced advice, energy monitoring tools, aftercare follow-up calls and more detailed aftercare service. These interventions were undertaken by staff at PiM in collaboration with LEAP and E&WA.

*"The Maltese pilot study indicates that using targeted social protection systems and support networks to deliver assistance to energy poor households can help tackle energy poverty.*

*However, in order to achieve this, an enabling environment must be in place in order to support the transition. The problem of energy poverty should not be treated locally without adequate coordination with national and European regulation, and requires a serious effort towards finding solutions for the underlying structural causes."*

**Brian Restall, Projects in Motion**

# SMART-UP IN ITALY

960 households provided with enhanced advice

60 households involved in small-scale pilot

28 people trained

**In Italy, the project was coordinated by AISFOR, a private training / knowledge building firm focusing on two areas – innovation and development - in the green and energy and agriculture sectors. It collaborates in the development of initiatives and projects at a local, national and European level.**

The smart meter rollout in Italy began in 2000, with 99% of Italians now having a smart meter. In common with the majority of countries represented via SMART-UP however, smart meters in Italy are usually sited in relatively inaccessible locations such as basements, with interfaces that are difficult for consumers to understand and use, and with no accompanying In Home Display installed as standard.

AISFOR engaged with 13 stakeholder organisations, from different areas of the social sector, to deliver the project. Those most involved were consumer associations which were then able to integrate the services offered to vulnerable consumers by providing enhanced training on domestic energy consumption. Others were non-profit support associations which were able to combine the provision of energy advice with existing services offered to vulnerable people. The project also collaborated with the University of L'Aquila and the Municipality of Silvi with which synergies were created to engage vulnerable consumers on the SMART-UP pilot. The large network of stakeholders engaged in Italy on SMART-UP enabled the project to have national reach and also ensured significant impact in stakeholders' awareness of the issue and how to support vulnerable consumers.

For the small-scale pilot, 20 households received an energy consumption monitoring tool which was composed of an energy display that collected consumption data from the electricity meter and from six smart plugs which were connected to the main six kitchen appliances. A sensor transmited the energy consumption data from the smart meter, and from the plugs to the energy display to be viewed instantly.

Furthermore the energy display was connected to an internet account through an internet bridge used to send the energy consumption data securely to the storage cloud where it could be accessed by the householder.

Once the householders in these experiential groups had installed the energy monitoring kit they were able to view and see graphs on their energy consumption (daily, weekly, monthly) via an internet account. Those that didn't receive the energy monitoring tool were provided instead with a paper 'energy diary' to help them monitor and record their energy use, with specific guidance given to consumers on how to collect and record the information needed.

*"In Italy SMART-UP is the first initiative at national level that has brought together actors from the social and energy sector to work together and support vulnerable consumers to be more energy efficient. We have learnt a lot from this experience including who the actors are that are supporting low-income households and what their competencies and working methodologies are. We have also learnt a lot about the problems faced by vulnerable consumers, in particular the fact that they distrust all operators when talking about their domestic energy consumption / bill / contract and that we need to separate vulnerable consumers from energy poor. With the former there may be the possibility of supporting them to be more efficient and save energy whilst the latter need support to actually increase their energy consumptions in order to meet the basic energy needs".*

**Marina Varvesi, AISFOR**

# SMART-UP IN SPAIN

**1,820 households provided with enhanced advice**

**60 households involved in small-scale pilot**

**107 people trained**

**SMART-UP in Spain was delivered by Ecoserveis, a non-profit organisation working on promotion and education of energy, energy efficiency and renewable energies. The smart meter rollout in Spain is now largely complete, although with meters placed in basements of buildings and inaccessible to individuals, and consumers not supplied with any kind of In Home Display as standard, the opportunity for individual consumers to access and act on the information provided by smart meters is limited.**

Ecoserveis approached this challenge in two ways: by applying the principles of SMART-UP to the large-scale intervention, where householders were provided with energy advice to help them change their energy-use behaviour; and by installing a device in small-scale pilot households which enabled consumers to monitor their own energy use and which would provide greater insight into the role of energy feedback tools in prompting behaviour change.

The larger pilot was delivered in partnership with the Barcelona Municipal Institute of Social Services (IMSS), which became interested in the project and decided to implement it within a wider project called 'Programme to fight against energy poverty' (PFAEP). PFAEP had two goals: to provide training and skills development for people over 45 who had formerly worked in the construction sector and were now unemployed; and to help tackle energy poverty. Ecoserveis developed and delivered the training and coordinated the project on behalf of a number of partners/agencies, with the 107 people trained subsequently providing face-to-face energy advice and completing questionnaires for 1820 households.

In the small-scale pilot, a smart monitoring device called a 'Mirubee' was installed in 60 households. The Mirubee is a system for monitoring electrical consumption which allows households – via an app - to understand energy use, identify opportunities to make savings, change tariff, and reduce energy bills. Participants then received different combinations of additional advice and support depending on which experiential group they had been allocated to (or, in the case of the control group, the Mirubee only).

*"Ecoserveis looked to create synergies with local organisations that had the same goal. Identification of energy poverty households is a critical issue for energy poverty projects and as such, partnering with social services was key to identifying vulnerable people in the city of Barcelona. However, energy poverty can also affect people not using social services who fall outside of the defined threshold for assistance. Ecoserveis tried to reach more people using NPOs working with ex-drug addicts and, for the small scale pilot, using the Social Housing Agency. This last partner was important to engage people from a single building".*

**Aniol Esquerra Alsius, Ecoserveis**

# SMART-UP IN THE UK

**SMART-UP in the UK was delivered by National Energy Action (NEA), the national fuel (energy) poverty charity working across England, Wales and Northern Ireland to ensure that everyone can afford to live in a warm, dry home.**

In comparison to some EU Member States, the issues around energy poverty are already well established and understood in the UK, although NEA consistently highlights that existing support and funding is inadequate to address the challenges.

The smart meter rollout itself is also now underway, with the UK Government committing to offering a smart meter to every household by 2020, and the additional needs of vulnerable consumers recognised within both the Smart Meter Installers Code of Practice (SMICOP) and in the planned marketing and engagement strategies. All consumers are also offered an In Home Display along with their smart meter which provides additional benefits to the meter itself, such as enabling consumers to monitor their energy usage in near-real time, and see how much they are spending in pounds and pence.

To deliver the project, NEA worked with five core stakeholder organisations: Gentoo Group; Riverside Housing; WM Housing; Freebridge Community Housing; and Groundwork Leeds. Energy suppliers also provided advice and support particularly with understanding existing practices and strategies for engaging and supporting vulnerable customers.

NEA's training team developed and delivered bespoke training courses, initially for employees of these core stakeholder organisations to enable them to provide advice and complete baseline questionnaires, although the training was later extended to other organisations with similar interests.

While most attendees already had experience of delivering energy efficiency advice, they were keen to understand more about smart meters and IHDs, and how they could be used to facilitate energy-related behaviour change and ultimately benefit their clients and tenants.

**105 households provided with enhanced advice**

**82 households involved in small-scale pilot**

**164 people trained**

Frontline workers then provided face-to-face advice to a total of 105 households, of which 82 were involved in the small-scale pilot and received combinations of additional follow-up support including information packs, advice visits and aftercare service.

*"SMART-UP has been a really inspiring project to be involved in as we have seen the difference that enabling a vulnerable household to understand and take control of their energy use can have on their sense of empowerment and control. It's helped us to refine the tools and the techniques for delivering energy efficiency and smart metering advice, and we've seen real dedication and enthusiasm from the frontline workers who received training from the project. We've learnt a lot from the experiences of both the households and frontline professionals involved, and we'll certainly be working to implement and promote those learnings going forward."*

**Dr Jamie-Leigh Ruse, National Energy Action**

# IMPACTS AND INSIGHTS

**The full data and analysis will be available publicly at www.smartup-project.eu, however a summary of some of the following conclusions and insights are shared below.**

## Engaging with vulnerable consumers

SMART-UP successfully engaged directly with almost 5,000 consumers however this was not always an easy task, and all members of the consortium encountered difficulties in identifying and recruiting vulnerable consumers to the project to some extent.

Key challenges included;

- Lack of trust, unwillingness to share personal information and unwillingness to admit to being vulnerable/in energy poverty.
- Language barriers, low levels of literacy or other issues which made it difficult to communicate effectively.
- Lack of interest in energy and/or understanding of how actions could lead to reduced consumption.
- Difficulties in identifying which consumers had smart meters (in countries where the smart meter roll-out wasn't complete).
- Data protection and informed consent procedures, while necessary, also meant that the consortium was in some cases unable to engage directly with the consumers and instead was reliant on public bodies who did not always see energy poverty as a priority area.

### What worked?

- Identifying and engaging with stakeholders who were known and trusted by vulnerable consumers was crucial to the success of the project. This was most effective when it included both 'top down' and 'bottom up' support, e.g. support at senior strategic level followed by the commitment and dedication of frontline workers undertaking training and delivering advice.
- Focusing activity on a particular community, building or other defined group/area, as in Spain and France, also helped with recruitment; as did incorporating recruitment within wider outreach activities. Door-to-door engagement worked but only when undertaken by representatives from organisations that were already known to the household.

### Recommendations

- Data matching between agencies would help with targeting. For example, helping to identify those on low incomes with high energy usage.
- Focusing activity on a particular community, building or other defined group/area can help increase engagement through a feeling of collective action.
- Incorporating recruitment into wider outreach activities could also be successful, such as workshops on energy-related issues. Door-to-door recruitment could work when conducted by agencies that are already known and trusted, but is unlikely to be successful where there is no prior relationship.
- Greater collaboration between various actors/ stakeholders is also necessary to identify and assist vulnerable consumers.

*Apart from towels and things like that, I put that on an hour wash, but a lot of my washing now is done on a half hour wash, because I've had some good energy saving tips, haven't I?*
**[SMART-UP participant]**

# Delivering Advice

SMART-UP was successful in improving understanding of smart meters/energy use and encouraging households to take action. Almost 60% of participants strongly agreed or tended to agree that advice they received via the project improved their understanding of smart meters and In Home Displays, and 66.5% of participants strongly agreed or agreed that that they used their IHD or app more often. 80% strongly agreed or agreed that they had taken action to reduce the amount of energy they use at home; and a similar number were interested in doing more to save energy at home in the future, either to save money or for environmental reasons.

There were however difficulties in getting people to continue to actively engage with the project. People were not always interested in energy issues or engaging in the energy market, or they had other priorities and demands on their time. It was also clear that at times there was often a gap between consumers wanting to change their behaviour, and then actually going ahead and doing so.

## What worked?

Generally speaking, the more interventions that the household received through the project (telephone calls, aftercare service, IHD), the more effective this was in encouraging behaviour change. However, vulnerable consumers and those in energy poverty are not a homogenous group, and it was clear that advice and support needed to be tailored where possible to the needs of the end user. This should ideally include provision of materials in multiple languages and formats, and using messaging that is relevant to their circumstances.

Direct contact via telephone calls was not always successful, as householders were either not available or unwilling to answer any calls where they did not recognise the number. In Spain, using WhatsApp was also incorporated and proved much more successful as a method of two-way communication. It was also a useful tool to continue to remind people of the project and continue to prompt engagement.

Where used, comparisons with consumption data of people in similar conditions and the personal experiences of others generated interest and made people more attentive. People also responded better when they were actively involved in the learning process, rather than passive consumers of written information.

## Recommendations

- Ensure that advice is delivered as close to the date on which a smart meter is installed in a household as possible.
- Provide more holistic interventions that give guidance on areas such as switching suppliers / tariffs / payment methods.
- Present advice in additional ways (such as via digital or online video content) in order to ensure the maximum number of households can be engaged by an intervention.

# Engaging with stakeholders

Engaging the support of stakeholders was essential to identify, recruit and support vulnerable households. Overall the stakeholders who worked on SMART-UP to deliver the interventions to householders felt that the project had been worthwhile especially in terms of increased knowledge of the energy sector, and increased competency in supporting vulnerable/ energy poor customers. However some of the following challenges were encountered when attempting to obtain stakeholder support;

- Lack of understanding of the issue of energy vulnerability and its relevance to them (and their client group), and thus an unwillingness to devote already over-stretched resources to supporting the project.
- Lack of awareness and preparedness towards energy poverty among social workers and local government entities.
- Lack of skill, knowledge and resources for frontline workers to provide the support needed.

## What worked?

- Emphasising SMART-UP as a 'solution' to help meet existing targets and objectives.
- Providing training – in some cases multiple sessions – to ensure that frontline workers had the skills needed to advise vulnerable households.

## Recommendations

- The wider impacts of energy poverty and the benefits of tackling it need to be recognised and addressed by policy makers and other key decision-makers.
- Frontline workers need to be supported by managers to tackle energy poverty issues among client groups and provided with the skills, knowledge and resources to do so.
- NGOs, advocacy groups and other organisations can also play a key role in facilitating action, particularly when projects are designed to integrate with other national and local priorities.


**The Mayor of Barcelona attends an Energy Poverty Congress co-organised by Ecoserveis**

*"Energy poverty was an issue that we were not aware of before our engagement on SMART-UP whilst now it is something we keep into account when discussing and implementing our social support strategies."*
**(Stakeholder, (ITALY))**

*"I use it every day. In fact, I use it more than every day. I keep going up to it, looking at the date and then pressing it to see what the gas is and what electric is and of course, I take a check. I love to see it and see what the gas is like and then the first thing in the morning, first thing I do before I put the kettle on for breakfast is find out how much is the standard chart, what it says there and then and then the total for the day before, you know what I mean? I mean it's like everything else, if you keep doing it, you find yourself into a habit don't you. It becomes part of the routine day."*
**[SMART-UP participant]**

# The role of smart meters

In the majority of countries included in SMART-UP the smart meters themselves were inaccessible and/or the information that consumers could access was difficult to understand. This explains to some extent why a large proportion of participants (92%) 'never' or 'seldom' used their smart meter to check how much energy they were using before the intervention, and while there was little change after the intervention, despite so many households saying that they had also taken action to reduce their energy use at home.

As the situation currently stands it is therefore difficult to understand how smart meters can realistically prompt additional behaviour change beyond that which may be achieved with a normal meter without IHDs or other apps/ devices that provide feedback. Even in these cases, the IHD-type devices which were trialled during SMART-UP required internet access which excluded many potential participants (in the UK, the device is installed as standard and does not rely on a Wi-Fi connection). The information provided by the different devices also varied in its usefulness to householders and thus so did their ability to access and act on the information.

## What worked?

- In general, where some kind of feedback mechanism was provided, this was appreciated by participants who liked the idea of being able to check their energy consumption.
- In the UK, the IHD was available as standard and the advice focused on how to 'get to grips' with the device and use it to make changes to energy usage in the home, for example switching on a kettle and seeing how that impacted on the traffic light system; or setting small budgeting goals.
- In Spain, Mirubees provided relevant information regarding energy consumption, especially in those houses where vulnerable consumers used the phone app to provide information about what apparatus was being used.

## Recommendations

- All consumers need to be provided with the means to understand their energy use and in turn change their behaviour (where this is not at the detriment of comfort and wellbeing). This information needs to be available in different formats and should not rely on Wi-Fi connection. For vulnerable consumers in particular, this needs to be supplemented with additional advice and support.
- Frontline workers also need to be able to understand and explain these devices, and this should be incorporated into any future training.

*"The IHD is useful for the participant as it helps them keep track of how much energy they are using. The tips in the booklet were also useful and as a result of the intervention and the materials, the participant is trying to reduce their energy use by turning off lights in the home and adjusting TRVs in rooms where heat isn't needed."*
**(SMART-UP stakeholder (UK))**

## Impact on energy poverty

SMART-UP was successful in reaching those households who were concerned about energy bills. Prior to assistance, 90.6% of households strongly agreed or tended to agree that they often worried about being able to afford their energy bill (55.4% strongly agreed / 35.2% tended to agree). After the intervention a slightly higher percentage (91.4%) agreed that they worried about their energy bill but the proportion changed (18.3% strongly agreed / 73.1% tended to agree).

While this suggests that concerns over energy bills were slightly alleviated, the face-to-face interviews and house visits also indicated that many people were unable to make significant and meaningful adjustments to their energy-related behaviour because they were already rationing their energy use.

This was impacting on households in a number of ways including worry/stress about bills and disconnections; low thermal comfort; cutting back on food and other items in order to save on energy bills; heating only one room of the property; and poor health and damage to property due to damp and mould. Many people were unable to understand their bills and even where the smart meter was accessible they didn't know how to read it. For these households, while SMART-UP may not have led to energy savings, it still provided benefits such as access to better tariffs, an understanding of how to deal with fuel debt issues, and a feeling of greater control over their energy use.

With the exception of the UK, the concept of energy poverty was also not widely understood among target stakeholders, so in many cases much effort was needed to raise awareness of the issue as well as persuade others to take action. There were numerous reasons for this including energy not being seen as falling within the remit of social workers, energy issues seen as the responsibility of energy companies, and a lack of appreciation of energy poverty as a distinct issue.

While there is still a long way to go before the level of funding and action is adequate to tackle the problem, it was nevertheless positive to see how concentrated activity could persuade others of the need to act, and ultimately benefit some of those most in need.

## Recommendations

- The complexity and rigidity of the regulations and existing policies, accompanied by the number of different services available to help consumers constitute a huge and complex web of information which can be difficult to navigate. Frontline workers can help bridge this information overload and assist energy-poor households to make small changes to their billing and consumption habits without leading to suppressed demand.

- Specific training initiatives for frontline workers or installers like SMART-UP are useful and can help make a difference, especially with regards to identifying obvious irregularities with consumption and billing, and with enabling them to propose more appropriate tariffs as well as adopt more energy efficient practices. Training can provide the basic knowledge needed in order to identify and tackle causes of vulnerability of the households they work with.

- Although low-income households can benefit from improving energy efficiency in their daily routines, in most cases energy use is already down to the bare minimum, and similar attention needs to be given towards ensuring that these households also maintain adequate thermal comfort, and don't engage in further "suppressed demand". Here, the focus of frontline workers' efforts needs to be on providing advice on understanding bills, dealing with energy debt and accessing other services.

*"Gràcies per enviar-me el missatge! La factura és un embolic!?! Ho fan expressament!!"*

*("Thanks for your message! The bill is very complicated!?! They do it on purpose!!")*

**[SMART-UP participant]**


For more information on the project please visit **www.smartup-project.eu**

The SMART-UP consortium would like to thank the European Union for funding the project; and all of the stakeholders who supported delivery and helped to contribute to the success of the project.

# SMART-UP

CONSUMER EMPOWERMENT IN A SMART METER WORLD

**www.smartup-project.eu**



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 649669.